

What is claimed is:

1. An apparatus for managing sub blocks within a base station manager (BSM), a plurality of control stations, and a
5 plurality of base stations in an IMT-2000 system, the apparatus comprising:

10 a TMN network management center for managing a state information, i.e., configuration, fault, performance, statistics, etc., of the sub blocks within the BSM, the plurality of control stations, and the plurality of base stations by means of the TMN method, and transferring a common management information service element (CMISE) service executive instruction recommended by the International Telecommunication Union (ITU-T) to the BSM;

15 a TMN repeater installed within the BSM and including modeled MO classes, for collecting the state information concerning the sub blocks within the BSM by means of the MO classes to transfer the state information to the TMN network management center, and updating the MO classes inside thereof
20 to correspond to a CMISE service executive instruction received from the TMN network management center;

25 a local TMN repeater installed within each of control stations, and housing the modeled MO classes, wherein said local TML repeater collects the state information of the sub blocks within the control stations thereof by means of the MO classes to transfer the state information to the TMN network management center, transfers the state information of the

pertinent sub blocks transmitted from the pertinent base station among the plurality of base stations managed thereby to the TMN network management center, and updates the MO classes inside thereof to correspond to the CMISE service executive instruction received from said TMN repeater within the BSM; and

a sub block state management section installed within each of base stations, for collecting the state information of the sub blocks inside thereof to transfer the state information to the local TMN repeater within the control stations.

2. A method for managing a mobile communication network in an IMT-2000 system by means of a TMN when a state information is generated from sub blocks within base stations or control stations, the method comprising the steps of:

a1) determining, in a local TMN repeater within each of control stations, whether or not the state information, such as configuration, fault, performance, statistics, etc., is generated from base stations managed thereby;

b1) determining, in the local TMN repeater within each of control stations, whether or not the state information, such as configuration, fault, performance, statistics, etc., is generated from sub blocks within the control station thereof, when the state information, such as configuration, fault, performance, statistics, etc., is not generated from the base stations managed thereby;

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c1) transferring, in the local TMN repeater, the state information to a TMN repeater within a BSM when the state information, such as configuration, fault, performance, statistics, etc., is generated from the sub blocks within the control station, and proceeding to the step a1) when the state information, such as configuration, fault, performance, statistics, etc., is generated from the sub blocks within the control station in the a1) step;

d1) transferring, in the TMN repeater within the BSM, the state information received from the local TMN repeater within the pertinent control station to a TMN network management center; and

e1) managing, in the TMN network management center, the pertinent control station by means of the TMN method upon receiving the state information of the sub blocks within the particular control station transmitted from the TMN repeater within the BSM.

3. The method as recited in claim 2, further comprising the steps of:

f1) transferring, in the local TMN repeater within each of control stations, the state information of the sub blocks within the particular base station to the TMN repeater within the BSM, when the state information, such as configuration, fault, performance, statistics, etc., is generated from the base stations managed thereby in the step a1);

g1) transferring, in the TMN repeater within the BSM,

the state information of the sub blocks within the particular base station received from the local TMN repeater within each of control stations to the TMN network management center; and

h1) managing, in the TMN network management center, the
5 pertinent control station by means of the TMN method upon receiving the state information within the particular base station from the TMN repeater within the BSM.

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10 4. A method for managing a mobile communication network in an IMT-2000 system by means of a TMN, the method comprising the steps of:

a2) transferring, in a TMN network management center, a CMISE service executive instruction to a TMN repeater within a BSM;

15 b2) determining, in the TMN repeater within the BSM, whether or not the CMISE service executive instruction pertains thereto upon receiving the CMISE service executive instruction from the TMN network management center;

20 c2) transferring, in the TMN repeater within the BSM, the CMISE service executive instruction to a local TMN repeater within a pertinent control station, when the CMISE service executive instruction does not pertain thereto in the step b2);

25 d2) determining, in the local TMN repeater within the pertinent control station, whether the CMISE service executive instruction is a state information collection command, a sub block reset command, a MO generation command,

or a MO erase command upon receiving the CMISE service executive instruction from the TMN repeater within the BSM;

e2) collecting, in the local TMN repeater within the pertinent control station, the state information of sub blocks within the pertinent control station thereof or within a pertinent base station, and transferring the result to the TMN network management center, if the CMISE service executive instruction is the state information collection command in the step d2); and

f2) managing, in the TMN network management center, the pertinent control station and the pertinent base station by means of the TMN method upon receiving the state information of the sub blocks within the pertinent control station or within the pertinent base station from the local TMN repeater within the pertinent control station.

5. The method as recited in claim 4, wherein collecting and transferring of the step e2) comprises:

a3) determining, in the local TMN repeater within the pertinent control station, whether the state information collection command pertains to the sub blocks within the control stations thereof or to the sub blocks within the base stations managed thereby;

b3) collecting, in the local TMN repeater within the pertinent control station, the state information of the sub blocks by means of MO classes, when the state information collection command pertains to the sub blocks thereof in the

step a3); and

c3) transferring, in the local TMN repeater within the pertinent control station, the state information of the pertinent sub blocks to the TMN network management center through the TMN repeater within the BSM.

6. The method as recited in claim 5, further comprising the steps of:

d3) transferring, in the local TMN repeater within the pertinent control station, the state information collection command to a sub block state management section within the pertinent base station, when the state information collection command pertains to the sub blocks of the pertinent base station managed thereby in the step a3);

e3) collecting, in the sub block state management section within the pertinent base station, the state information related to the pertinent sub blocks upon receiving the state information collection command transmitted from the local TMN repeater within the pertinent control station;

f3) transferring, in the sub block state management section within the pertinent base station, the state information of the pertinent sub blocks to the local TMN repeater within the control stations; and

g3) transferring, in the local TMN repeater within the pertinent control station, the state information to the TMN network management center through the TMN repeater within the

BSM upon receiving the state information of the sub blocks within the pertinent base station transmitted from the sub block state management section within the pertinent base station.

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7. The method as recited in claim 4, further comprising the steps of:

g2) forcibly resetting, in the local TMN repeater within the pertinent control station, the pertinent sub blocks thereof or the sub blocks within the pertinent base station, and transferring a result signal of the resetting to the TMN network management center, when the CMISE service executive instruction is the sub block reset command in the step d2); and

h2) managing, in the TMN network management center, the pertinent control station or the pertinent base station so as to correspond to the result signal of the success or failure of the sub blocks within the pertinent control station or the pertinent base station received from the local TMN repeater within the pertinent control station.

8. The method as recited in claim 7, wherein said resetting and transferring of the step g2) comprises:

a4) determining, in the local TMN repeater within the pertinent control station, whether the sub block reset command pertains to the sub blocks thereof or to the sub blocks within the base stations managed thereby; and

b4) forcibly resetting, in the local TMN repeater within the pertinent control station, the pertinent sub blocks thereof by means of modeled object classes, and transferring the result of the resetting to the TMN network management center, when the sub block reset command pertains to the sub blocks thereof in the step a4).

9. The method as recited in claim 8, further comprising the steps of:

c3) transferring, in the local TMN repeater within the pertinent control station, the sub block reset command to the sub block state management section within the pertinent base station, when the sub block reset command pertains to the sub blocks within the pertinent base station managed thereby in the step a4);

d4) forcibly resetting, in the sub block state management section within the pertinent base station, the pertinent sub blocks and transferring a result signal of the resetting to the local TMN repeater within the pertinent control station upon receiving the sub block reset command from the local TMN repeater within the pertinent control station; and

e4) transferring, in the local TMN repeater within the pertinent control station, the result signal of the resetting received from the sub block state management section within the base stations to the TMN network management center through the TMN repeater within the BSM.

10. The method as recited in claim 4, further comprising the steps of:

i2) generating, in the local TMN repeater within the pertinent control station, pertinent MOs among the modeled MOs thereof, and transferring a result signal of the generating to the TMN network management center through the TMN repeater within the BSM, when the CMISE service executive instruction is the MO generation command in the step d2); and

j2) managing, in the TMN network management center, the pertinent control station by means of the TMN method so as to correspond to the result signal of the generating received from the local TMN repeater within the pertinent control station.

11. The method as recited in claim 4, further comprising the steps of:

k2) erasing, in the local TMN repeater within the pertinent control station, the pertinent MOs among the modeled MOs inside thereof, and transferring a result signal of the erasing to the TMN network management center through the TMN repeater within the BSM, when the CMISE service executive instruction is the MO erase command in the step d2); and

l2) managing, in the TMN network management center, the pertinent control station by means of the TMN method to correspond to the result signal of the erasing received from the local TMN repeater within the pertinent control station.

12. The method as recited in claim 4, further comprising the steps of:

m2) performing, in the TMN repeater within the BSM, at least one of sub block state information collection, sub block reset, MO generation or the MO erase to correspond to the CIMISE service executive instruction, and then transferring the result value to the TMN network management center, when the CMISE service executive instruction pertains to the BSM in the step b2); and

n2) managing, in the TMN network management center, the BSM by means of the TMN method to correspond to the result signal received from the TMN repeater within the BSM.

13. The method as recited in claim 12, wherein the step m2) comprises:

m-1) determining, in the TMN repeater within the BSM, whether the CMISE service executive instruction is the state information collection command, the sub block reset command, the MO generation command, or the MO erase command;

m-2) collecting, in the TMN repeater within the BSM, the state information of the pertinent sub blocks by means of the MO classes, when the CMISE service executive instruction is the state information collection command in the step m-1); and

m-3) transferring, in the TMN repeater within the BSM, the collected state information of the pertinent sub blocks to the TMN network management center.

14. The method as recited in claim 13, further comprising the step of:

forcibly resetting, in the TMN repeater within the BSM, the pertinent sub blocks by means of the MO classes and transferring a result signal of the resetting to the TMN network management center, when the CMISE service executive instruction is the sub block reset command in the step m-2).

15. The method as recited in claim 13, further comprising the step of:

generating, in the TMN repeater within the BSM, the pertinent sub blocks among the MO classes and transferring a result signal of the generating to the TMN network management center.

16. The method as recited in claim 13, further comprising the step of:

generating, in the TMN repeater within the BSM, the pertinent sub blocks among the MO classes and transferring a result signal of the generating to the TMN network management center.